WHAT IS CLAIMED IS:

1. A storage device comprising:

a integral storage medium comprising one or more stacks, wherein each stack includes a plurality of storage locations that are distributed throughout a portion of a volume of the integral storage medium;

an access mechanism coupled to the controller and configured to write data to the integral storage medium;

a controller configured to receive a command to write a unit of primary data to a first storage location, wherein in response to the command to write, the controller is configured to control the access mechanism so that the unit of primary data is written to a first storage location within a first stack of the one or more stacks and a corresponding unit of redundant data is written to a second storage location within one of the one or more stacks included in the integral storage medium.

2. The storage device of claim 1, wherein the second storage location is included in the first stack.

3. The storage device of claim 2, wherein the integral storage medium is a holographic storage medium and wherein the first and second storage locations are accessed by varying one or more reference beam characteristics.

4. The storage device of claim 3, wherein the one or more reference beam characteristics include at least one of reference beam angle, reference beam wavelength, and reference beam phase.

5. The storage device of claim 2, wherein the integral storage medium is a multi-layer optical storage medium.

6. The storage device of claim 5, wherein the second storage location is included on a same layer as the first storage location, wherein the second storage location is not included in the first stack.

7. The storage device of claim 1, wherein the integral storage medium is a holographic storage medium and wherein the first and second storage locations are accessed using the same reference beam characteristics, wherein the second storage location is not included in the first stack.

8. The storage device of claim 1, wherein the controller is configured to receive a command to read the unit of primary data from the first storage location, wherein if the controller detects a read error for the first storage location, the controller is configured to control the access mechanism to read the corresponding unit of redundant data stored in the second storage location, wherein the controller is configured to use the corresponding unit of redundant data to satisfy the command to read.

9. The storage device of claim 1, wherein the controller is configured to receive a command to read the unit of primary data from the first storage location, wherein if a specified number of read errors occur for the first storage location, the controller is configured to set an indication indicating that the first storage location is a failed storage location.

10. The storage device of claim 1, wherein the controller is configured to generate the corresponding unit of redundant data from n units of primary data by generating a parity unit from the n units of primary data.

11. The storage device of claim 10, wherein the controller is configured to generate the corresponding unit of redundant data from one unit of primary data.

12. The storage device of claim 1, wherein the access mechanism is configured to write the unit of primary data to the first storage location and to write the corresponding unit of redundant data to the second storage location at the same time.

13. A storage device comprising:

a controller configured to receive a command to read data from a first storage location;

an integral storage medium comprising a plurality of stacks, wherein each stack comprises a plurality of storage locations distributed throughout a portion of a volume of the integral storage medium;

an access mechanism coupled to the controller and configured to access storage locations within the integral storage medium;

wherein in response to a read error being detected at the first storage location, the controller is configured to control the access mechanism to access redundant data that corresponds to the data stored in the first storage location, wherein the first storage location is included in a first stack of the plurality of stacks, wherein the redundant data is stored in a second storage location.

14. The storage device of claim 13, wherein the controller is configured to satisfy the command by generating the data from the redundant data.

15. The storage device of claim 13, wherein the unit of redundant data is a copy of the unit of primary data.

16. The storage device of claim 13, wherein the controller is configured to mark the first storage location as a failed storage location in response to the read error being detected at the first storage location a certain number of times.

17. The storage device of claim 16, wherein in response to a second command to read data from the first storage location, the controller is configured to access the redundant data stored in the second storage location if the first storage location is marked as the failed storage location.

18. The storage device of claim 13, wherein the second storage location is included in the first stack.

19. The storage device of claim 18, wherein the integral storage medium is a holographic storage medium and wherein the first and second storage locations are accessed by varying one or more reference beam characteristics.

20. The storage device of claim 18, wherein the integral storage medium is a multi-layer optical storage medium, and wherein the first and second storage locations are located on different layers of the multi-layer optical storage medium.

21. The storage device of claim 13, wherein the second storage location is included in a second stack.

22. The storage device of claim 21, wherein the integral storage medium is a holographic storage medium and wherein the first and second storage locations are accessed using the same reference beam characteristics.

23. A method of using a storage device, the method comprising:

receiving a command to write a unit of primary data to a first storage location within a first stack in an integral storage medium comprised in the storage device, wherein the first stack comprises a plurality of storage locations distributed throughout of portion of a volume of the integral storage medium;

storing the unit of primary data in the first storage location within the first stack; and

in response to said receiving, storing a unit of redundant data that corresponds to the unit of primary data to a second storage location within the storage medium.

24. The method of claim 23, wherein said storing the unit of redundant data comprises storing the unit of redundant data to a second storage location within the first stack.

25. The method of claim 24, wherein the integral storage medium is a holographic storage medium and wherein the second storage location is accessed by varying one or more characteristics of a reference beam used to access the first storage location.

26. The method of claim 24, wherein the integral storage medium is a multi-layer optical storage medium, and wherein the first storage location is on a first layer of the multi-layer optical storage medium and the second storage location is on a second layer of the multi-layer optical storage medium.

27. The method of claim 23, wherein the second storage location is in a second stack in the integral storage medium.

28. The method of claim 27, wherein the integral storage medium is a holographic storage medium and wherein the second storage location is accessed using the same reference beam characteristics as are used to access the first storage location.

29. The method of claim 27, wherein the integral storage medium is a multi-layer optical storage medium, and wherein the first storage location and the second storage location are located on a same layer of the multi-layer optical storage medium.

30. The method of claim 23, further comprising the controller calculating the parity of a plurality of units of data to produce the unit of redundant data, wherein the plurality of units of data include the unit of primary data.

31. A method of using a storage device, the method comprising:

receiving a command to read a unit of primary data from a first storage location in a first stack within an integral storage medium, wherein the first stack comprises a plurality of storage locations distributed throughout a portion of a volume of the integral storage medium;

accessing the first storage location; and

if an error is detected for the first storage location, accessing a second storage location within the storage medium, wherein the second storage location stores a unit of redundant data corresponding to the unit of primary data.

32. The method of claim 31, further comprising generating the unit of primary data from the unit of redundant data stored at the second storage location.

33. The method of claim 31, wherein the unit of redundant data is a copy of the unit of primary data.

34. The method of claim 31, wherein the second storage location is located within the first stack.

35. The method of claim 34, wherein the integral storage medium is a holographic storage medium and wherein the second storage location is accessed by varying one or more characteristics of a reference beam used to access the first storage location.

36. The method of claim 34, wherein the integral storage medium is a multi-layer optical storage medium, and wherein the first storage location is on a first layer of the multi-layer optical storage medium and the second storage location is on a second layer of the multi-layer optical storage medium.

37. The method of claim 31, wherein the second storage location is in a second stack in the integral storage medium.

38. The method of claim 37, wherein the integral storage medium is a holographic storage medium and wherein the second storage location is accessed using the same reference beam characteristics as are used to access the first storage location.

39. The method of claim 37, wherein the integral storage medium is a multi-layer optical storage medium, and wherein the first storage location and the second storage location are located on a same layer of the multi-layer optical storage medium.

40. A storage device comprising:

integral means for storing data, wherein the means for storing data includes one or more stacks, wherein each of the stacks includes a plurality of storage locations that are distributed throughout a volume of the integral means for storing data;

means for accessing data stored on the integral means for storing data; and

means for controlling the means for accessing data, wherein the means for controlling are configured to receive a command to access a first unit of data stored on a first storage location within a first one of the stacks, wherein if an error is detected for the first storage location, the means for controlling are configured to access a unit of redundant data stored at a second storage location within the integral means for storing data.